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**Abstract**

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# When talking makes you feel like a group: The emergence of group-based emotions

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Group-based emotions are emotional reactions to group concerns and have been shown to emerge when people appraise events while endorsing a specific social identity. Here we investigate whether discussing a group-relevant event with other group members affects emotional reactions in a similar way. In two experiments, we confronted participants with an unfair group-relevant event, while manipulating their social identity and whether they discussed the event or an unrelated topic. Our major finding is that having group members discuss the unfair group-relevant event led to emotions that were more negative than in the irrelevant discussion and comparable to those observed when social identity had been made salient explicitly beforehand. Moreover, it also generated group-based appraisals of injustice (Experiment 1) and group-based identity (Experiment 2). This research sheds new light not only on the consequences of within-group sharing of emotions for the unfolding of intergroup relations but also on the nature of group-based emotions.

*Keywords:* Group-based emotions; Group-based appraisals; Self-categorisation; Social identity; Social interaction.



In recent years there has been a considerable amount of work on emotions in social contexts (Parkinson, Fischer, & Manstead, 2004) and, more specifically, in intergroup relations (for reviews, see Iyer & Leach, 2008; Yzerbyt & Demoulin, 2010). A most intriguing debate concerns the nature and role of group-based emotions, that is, emotions experienced on behalf of the group (Kuppens & Yzerbyt, 2012, 2014; Smith, Seger, & Mackie, 2007; Yzerbyt, 2006). Interestingly, in most studies, participants report their emotions about some event while being alone. Researchers have argued that the psychological salience of people's group membership leads them to react to a situation in terms of their social identity (Fischer, Haslam, & Smith, 2010; Yzerbyt, Dumont, Wigboldus & Gordijn, 2003). This, in turn, enables them to take group goals into consideration and to experience group-based emotions, defined here as emotional reactions to group concerns. Whereas previous research has used explicit manipulations of group membership to make social identity more or less salient, the question is whether group-based concerns can also affect emotional reactions in other ways. The present research aims to compare this to a more subtle and ecologically valid

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manipulation by instructing participants to talk about an emotional topic that is either relevant or irrelevant to group concerns.

Group-based emotions can be defined as emotional reactions to group concerns. In an influential chapter, E.R. Smith (1993) combined appraisal models of emotions (e.g., Frijda, Kuipers, & Ter Schure, 1989; C.A. Smith & Kirby, 2001) with self-categorisation theory (Turner, Hogg, Oakes, Reicher, & Wheterell, 1987). To the extent that their social identity is salient, people may appraise the surrounding world not so much with regard to their personal concerns but rather with respect to group concerns. Smith presented his theory as a new way of conceptualising prejudice and people's views about outgroups in intergroup relations (e.g., Mackie, Devos, & Smith, 2000). Yzerbyt and colleagues (Gordijn, Wigboldus, & Yzerbyt, 2001; Kuppens & Yzerbyt, 2012; Yzerbyt, Dumont, Mathieu, Gordijn, & Wigboldus, 2006) extended Smith's theoretical insight by putting a stronger emphasis on the self-categorisation mechanism involved in group-based emotions. These authors indeed found that varying the salience of a particular group membership as opposed to another changed the emotions reported by their participants (Yzerbyt et al., 2003).

An important characteristic of these lines of research is that after participants' group membership has been made salient, they are asked to report their emotions in isolation. In real life, however, social identity is rarely made salient in such an explicit way. Rather, social identities are often activated as a spontaneous by-product of social interactions, such as discussing social or emotional events with others (e.g., Peters, Kashima, & Clark, 2008; Rimé, 2009). We expect that to the extent that people talk to each other about some event that affects a group they both belong to, they may be particularly likely to notice their shared predicament. As a result of talking about their evaluation of the situation, they may end up experiencing emotions that more readily reflect group-based as opposed to more strictly individual concerns.

The key question is thus whether group-based emotions can also be affected by social interactions with group members about the emotion-eliciting event, even in the absence of explicit reminders of one's social identity. There are in fact several reasons to think that this may be the case. First, social interaction concerning emotional topics has been found to increase group cohesion (Espitalier, Tcherkassof, & Delmas, 2003). Second, emotion sharing has been reported to lead to a shared perspective because of emotion contagion and social appraisals (Manstead & Fischer, 2001; Mead, 1934) and thus to increase homogeneity in the group. Third, social interaction would seem to foster group-based cognition. One type of group-based cognition is group consensus. Haslam et al. (1998) showed that making the intergroup context explicitly salient enhances stereotype consensus. These authors predicted that social interaction would have a similar effect on consensus because common group membership triggers expectations to agree on issues relevant to the shared identity. As expected, social interaction increased stereotype consensus, and this effect was especially robust for outgroup stereotypes (Haslam et al., 1998; Stott & Drury, 2004; Thompson, Judd, & Park, 2000). Crucially, social interaction led to more ingroup stereotype consensus only when the interaction occurred in an intergroup context, that is, when it was preceded by a discussion about the outgroup. Conceptually similar effects were found by Stott and Drury (2004), who additionally showed that group interaction led to more negative stereotypes of the outgroup and positive stereotypes of the ingroup (see also Smith & Postmes, 2011). Social interaction thus leads to more stereotype consensus, but only when the social interaction occurs in a context that renders the intergroup dimension of the interaction relevant. In the two experiments reported here, we therefore compare interaction on a group-relevant theme versus an individual relevant theme and expect that the group-relevant theme will facilitate the experience of group-based emotions.

To sum up, previous research has shown that explicitly manipulating the salience of a particular social identity can affect the emotions felt on behalf of that group. Our question here is whether

similar effects can be obtained in more subtle ways, namely through social interaction with group members. A discussion with fellow group members on a topic involving concerns of one's common group can lead to a more group-based perspective (or social identity salience) and this group-based point of view may manifest itself in emotions that reflect group-based concerns.

A recent study by Kuppens, Yzerbyt, Dandache, Fischer, and van der Schalk (2013, Experiment 2) showed that within-group interaction led to more intense group-based indignation, but there is a lack of evidence for the robustness and the exact process leading to these results. In the present effort, we again focus on situations in which participants are not personally concerned by the events, but only through their group membership, in order to study group-based rather than individual emotions. The current studies go beyond previous results in two important ways. First, we include an explicit manipulation of social identity salience and a social interaction manipulation in the same study in order to directly compare their effects. In fact, we compare the focal social interaction condition with two control conditions in order to specify the boundary conditions. Second, we include measures of specific group-based appraisals to highlight their importance for group-based emotions.

In a first experiment, we wanted to examine whether both the explicit focus on one's social identity and entering a discussion about a group-relevant issue had equal power to trigger group-based emotions. In a second experiment, we wanted to replicate the findings while collecting stronger evidence that the discussion generated group-based emotions.

## EXPERIMENT 1

The goal of Experiment 1 was to examine the conditions under which interacting with a fellow group member is able to fuel group-based emotional reactions. We assigned participants randomly to one of three conditions before they learned about an unfair and harmful new policy hitting a social group. A third of the participants were initially led to see themselves as members of the same group and then asked to discuss the controversial policy with another participant in the same condition (identity: group; discussion: relevant). A second third of the participants were induced to see themselves as individuals before hearing about the policy affecting the group and asked to discuss it with another participant in the same condition (identity: individual; discussion: relevant). A final third of the participants were also induced to see themselves as individuals before hearing about the policy but were then asked to discuss an unrelated topic that concerned them individually (identity: individual; discussion: irrelevant).

We first expected a main effect of the relevance of the topic discussed, such that participants would feel more negatively when their discussion concerned the controversial policy than when the discussion concerned some other unrelated topic. Second, whether participants were led to see themselves as group members or individuals right before the start of a discussion about the controversial policy should not impact its outcome because such a discussion has the effect that all partners end up sharing the same group perspective.

### Method

We report how we determined our sample size, all data exclusions, all manipulations and all measures in the study.

#### *Participants*

A total of 71 pupils (53 female, 17 male and 1 unspecified gender; mean age: 17.59) in their last year of high school took part in the experiment. The size of the sample was determined on the basis of the classes made available by the principal and the time given to operate in the school. Seven participants were excluded from further analyses either because they were not native French speakers or were not Belgian citizens.

*Procedure and design*

In the classroom, participants learned that they would take part in a study about some pending decisions regarding students' access to universities in Belgium. There were three different versions of our questionnaire. One third of participants was assigned to the *group member identity* condition and read that the study was about comparing their reactions as future college students to those of politicians. In order to ensure that participants in the group member condition would activate their group identity (for a similar procedure, see Yzerbyt et al., 2003), they were asked to answer a series of questions about their identification with future college students. The remaining participants were assigned to one of two *individual identity* conditions and learned that the study concerned their reactions as individuals. After reading these minimal instructions, all participants were asked to report their experience with college administration and their choice of college major. This was done to render college education a salient issue for all participants.

All participants were then asked to read a (fake) newspaper excerpt. The alleged newspaper article reported that the French-speaking authorities had decided to implement a Dutch exam before acceptance to college. This decision aimed at reducing the number of non-Belgian students in Belgian universities. This was depicted as a relatively sudden decision, one which had pretty dramatic consequences for non-Belgian students, especially those who actually have few opportunities to learn Dutch in their own country (in Belgium, where Dutch is an official language, most pupils have some Dutch classes during high school). Whereas authorities allegedly explained the non-discriminating nature of this decision, student representatives were claiming the unfairness of the policy and called for student mobilisation against the decision.

When they had finished reading the article, all participants took part in a discussion in groups of two. Participants in the group member identity condition and half of participants in the individual identity condition were invited to discuss the content of the newspaper article ("group member identity, relevant discussion" condition and "individual identity, relevant discussion" condition, respectively). The other half of the participants in the individual condition were asked to discuss their experience with college administration and their choice of major (individual identity, irrelevant discussion). Although the choice of major is relevant to all future college students, it is not something that affects them *as a group* and is therefore unlikely to make the future college student social identity salient.

After five minutes of discussion, participants were requested to go back to their questionnaire and to answer the remaining questions. Depending on condition, participants were reminded to answer as individuals or as future college students. The questions pertained to participants' appraisal of the event and their emotional reactions. For exploratory purposes, we also enquired about the emotional reactions attributed to other future college students. For all participants, the last page of the questionnaire measured a series of control variables.

*Dependent variables*

Building upon Smith and Kirby's (2001) appraisal components, we used seven items to capture participants' *appraisal* of the controversial policy. Specifically, we measured participants' appraisals of motivational relevance (i.e., "I feel concerned by the selection procedure mentioned in the newspaper article"), motivational congruence (i.e., "The selection procedure mentioned in the newspaper article is something very negative for me" and "I have the feeling that politicians do not care about the life projects of future college students"), other-agency (i.e., "I think that politicians are clearly responsible for the selection procedure mentioned in the newspaper article"), situational coping potential (i.e., "I have the feeling that there are ways to oppose the selection procedure mentioned in the newspaper article"), emotional coping potential (i.e., "I do not easily accept the idea that the selection procedure mentioned in the newspaper article will actually be implemented")

and future expectancy (i.e., "Whatever we do, I'm rather pessimistic regarding the suppression of the selection procedure mentioned in the newspaper article"). Because our predictions were focusing on reactions of anger, we also included one item tapping the appraisal of unfairness (i.e., "In my opinion, the selection procedure mentioned in the newspaper article is totally unfair"). Participants were invited to indicate their answers on 7-point scales ranging from 1 (= not at all) to 7 (= completely).

### *Emotional reactions*

Eight emotional items were used in order to assess participants' emotional reactions of anger (angry, revolted, $r$ = .79), anxiety (anxious, preoccupied, $r$ = .60), sadness (resigned, downhearted, $r$ = .25) and happiness (joyful, satisfied, $r$ = .74). They were all answered on 7-point scales, ranging from 1 (= not at all) to 7 (= completely). The same items were used to measure the emotional reactions attributed to the other future college students (anger: $r$ = .81; happiness: $r$ = .69; sadness: $r$ = .59; anxiety: $r$ = .42).

### *Control variables*

Knowledge of the Dutch language was assessed by means of two items. The first asked participants whether or not they had taken Dutch courses during their curriculum. The second asked participants to estimate their competence in Dutch on a scale ranging from 1 (= very bad) to 5 (= very good).

## Results

Ten participants were excluded from the analyses because they did not take any Dutch courses during their high school years and were thus potentially personally impacted by the controversial policy. The competence in Dutch was similar across conditions, $F(2,51) = 1.09$, ns, and did not differ from the mid-point of the scale, $M = 2.89$, $t(53) < 1$, ns. All subsequent analyses control for participants' gender. Means, standard deviations and correlations for all variables are in Table 1.

**Table 1.** *Means, standard deviations, and correlations for the measures in Experiment 1*

| | | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Motivational relevance | 4.50 | 2.07 | | | | | | | | | | | | |
| 2 | Motivational congruency 1 | 3.87 | 2.11 | .27* | | | | | | | | | | | |
| 3 | Motivational congruency 2 | 5.26 | 1.47 | .17 | .38** | | | | | | | | | | |
| 4 | Other-agency | 5.48 | 1.33 | .38** | .23 | .28* | | | | | | | | | |
| 5 | Situational coping potential | 4.72 | 1.66 | .27 | .17 | .19 | .31* | | | | | | | | |
| 6 | Emotional coping potential | 5.48 | 1.54 | .25 | .00 | .19 | .22 | .06 | | | | | | | |
| 7 | Future expectancy | 3.83 | 1.67 | .26 | −.15 | −.18 | −.16 | −.11 | −.12 | | | | | | |
| 8 | Unfairness | 5.67 | 1.63 | .15 | .23 | .31* | .48** | .15 | −.04 | −.10 | | | | | |
| 9 | Anger | 4.51 | 1.90 | .32* | .30* | .43** | .63** | .22 | .33* | −.24 | .55** | | | | |
| 10 | Happiness | 1.57 | 1.17 | .01 | −.10 | −.29* | −.28* | −.03 | −.05 | .19 | −.40** | −.31* | | | |
| 11 | Sadness | 2.65 | 1.42 | .16 | .34* | .30* | .12 | −.12 | −.05 | −.02 | .30* | .31* | .10 | | |
| 12 | Anxiety | 4.14 | 1.84 | .38** | .50** | .32* | .25 | −.11 | .17 | .02 | .36** | .40** | −.10 | .54** | |
| 13 | Competence in Dutch | 2.89 | 1.02 | −.31* | −.67** | −.52** | −.22 | −.12 | −.09 | .26 | −.24 | −.39** | .09 | −.37** | −.46** |

*$p < .05$; **$p < .01$.

*Appraisal*

We examined the impact of our manipulation by means of a multilevel regression analysis in which pupils were level-1 units and discussion groups were level-2 units. All multilevel models contain a random intercept for discussion group, which controls for possible correlation (non-independence) between the responses of pupils who were in the same discussion group. Our data were analysed using two orthogonal contrasts. The first "relevance" contrast examined the impact of the relevance of the topic of discussion and opposed the condition in which the topic of the discussion was irrelevant (coded –2) to the two conditions in which the topic of the discussion concerned the controversial policy (coded 1). The second "identity" contrast concerned the identity endorsed by participants in the relevant condition and compared the condition in which participants had been led to categorise themselves as an individual (coded –1) to the one in which participants had been led to categorise themselves as a group member (coded 1). Participants who discussed the irrelevant topic were coded "0" on the identity contrast.

As expected, participants in the relevant discussion conditions found the decision more unfair than those in the irrelevant discussion condition, $b = 0.38$, $p = .03$. The identity contrast was not significant, $b = -0.18$, $p = .53$. In other words, the perception of unfairness was less intense in the individual irrelevant discussion condition ($M = 4.83$, $SD = 1.88$) than in both the individual relevant discussion condition ($M = 6.12$, $SD = 1.45$) and the group member relevant discussion condition ($M = 6.00$, $SD = 1.30$).

Our manipulation had no impact on future expectancy, motivational relevance, other-agency or situational coping, all $p$s > .13. An unexpected effect was found on emotional coping. The relevance contrast was not significant, $b = -0.03$, $p = .84$, but the identity contrast was, $b = 0.65$, $p = .02$. Participants in the group member relevant condition had higher emotional coping potential ($M = 6.00$, $SD = 0.79$) than participants in the individual irrelevant condition ($M = 5.53$, $SD = 1.28$) and in the individual relevant discussion one ($M = 4.82$, $SD = 2.16$).

*Emotional reactions*

The effects of our manipulation on emotions were analysed using the same contrast codes as above. In line with our hypotheses, participants in the relevant discussion conditions reported more anger and less happiness than participants in the irrelevant discussion condition, $b = 0.33$, $p = .09$ and $b = -0.38$, $p = .003$, respectively, although the effect on anger fell short of conventional significance (for all emotion means, see Table 2). The identity contrast was not significant for anger, $b = -0.18$, $p = .59$, or for happiness, $b = 0.05$, $p = .81$. For anxiety and sadness, neither the relevance nor the identity contrast proved significant (all $p$s > .27).

Because the gender distribution was not balanced, we conducted our analyses while controlling for gender. As it turns out, when we excluded gender from the analysis of anger, the relevance contrast came out significant, $b = 0.41$, $p = .04$, and the identity contrast did not, $b = 0.05$, $p = .86$. Turning to happiness, excluding gender from the analysis had the relevance contrast remain significant, $b = -0.36$, $p = .006$, and the identity contrast remain non-significant, $b = 0.11$, $p = .59$. We come back to the potential impact of gender in our discussion.

Also, the effect of our manipulation on anger and happiness did not change when we included participants' individual level of Dutch as a covariate, confirming that participants were indeed using a social, and not merely an individual, perspective. Interestingly, though, this analysis revealed that participants' competence in Dutch was related to their level of anger such that lower competence led to more anger, $b = -0.61$, $p = .01$.

*Mediational analysis*

Our next analysis focused on the mediational role of appraisals. In particular, unfairness is an important appraisal involved in anger, and so we tested whether there was an indirect effect of the relevance of the discussion through unfairness on anger. Perceived unfairness predicted anger,

**Table 2.** *Appraisal and emotion means as a function of experimental condition (Experiment 1;with standard deviations in parentheses)*

| | | *Individual irrelevant* | *Individual relevant* | *Group relevant* |
|---|---|---|---|---|
| Appraisals | Motivational relevance | 4.35[a] (1.69) | 4.59[a] (2.72) | 4.55[a] (1.82) |
| | Motivational congruency 1 | 4.00[a] (2.03) | 4.18[a] (2.01) | 3.50[a] (2.31) |
| | Motivational congruency 2 | 5.24[a] (1.20) | 5.35[a] (1.62) | 5.20[a] (1.61) |
| | Other-agency | 5.24[a] (1.25) | 5.47[a] (1.50) | 5.70[a] (1.26) |
| | Situational coping potential | 4.56[a] (1.63) | 4.76[a] (1.60) | 4.80[a] (1.79) |
| | Emotional coping potential | 5.53[ab] (1.28) | 4.82[a] (2.16) | 6.00[b] (0.79) |
| | Future expectancy | 4.47[a] (1.23) | 4.00[ab] (1.84) | 3.15[b] (1.66) |
| | Unfairness | 4.82[a] (1.88) | 6.12[b] (1.45) | 6.00[b] (1.30) |
| Emotions | Anger | 3.62[a] (1.96) | 4.82[ab] (1.88) | 5.00[b] (1.67) |
| | Happiness | 2.38[a] (1.69) | 1.09[b] (0.37) | 1.25[b] (0.60) |
| | Sadness | 2.91[a] (1.62) | 2.32[a] (1.21) | 2.70[a] (1.41) |
| | Anxiety | 4.12[a] (1.59) | 4.12[a] (1.97) | 4.18[a] (2.01) |

*Note:* Different superscripts indicate significant differences at .05 (one-tailed).

$b$ = 0.55, $p$ < .001, and adding unfairness to the model decreased the relevance contrast from $b$ = 0.33 to $b$ = 0.14. To test the indirect effect, we used the empirical-$M$ test (MacKinnon, Lockwood, & Williams, 2004) because it performed well in a simulation study using multilevel data similar to the data of our study (Pituch, Stapleton, & Kang, 2006). The empirical-$M$ test confirmed that the indirect effect was significant, 0.21, 95% CI [0.03; 0.44]. Of interest, the experience of happiness was unrelated to perceived unfairness and the impact of the relevance manipulation did not change as a function of taking perceived unfairness into account.

### *Attributed emotions*

We analysed the emotions attributed to group members using the same multilevel analyses and contrasts as above. Our manipulation had no effect on the emotional reactions attributed to the group members (all $p$s > .15).

## Discussion

Participants perceived more unfairness when they discussed the relevant topic (including group concerns) than when the topic of their discussion concerned some other aspect of their future life as college students. The effect of the relevance of the discussion topic was in the predicted direction for both anger and happiness, albeit only marginally so for anger. In line with our hypothesis, we found a significant indirect effect of relevance through unfairness on anger. This pattern replicates earlier research in which such mediation was obtained (e.g., Kuppens et al., 2013; Yzerbyt et al., 2003) and is consistent with the importance of the unfairness appraisal to (group-based) anger (e.g., Kuppens, Van Mechelen, Smits, & De Boeck, 2003; H. J. Smith & Kessler, 2004).

The present data thus provide encouraging evidence that discussing a controversial issue with another group member altered the appraisal of the event and, as a consequence, the emotions reported about the event. Importantly, the mere encounter with a fellow future college student and the instruction to discuss personal options pertaining to their student status did not engender the same reactions as the ones observed in the two other conditions. As a matter of fact, although the future choice of a specific subject in higher education is an issue that is of interest to *all* students, it is not by definition a topic that affects students *as a group*. In sharp contrast, when the discussion clearly pertained to the policy, a topic that affects all students as a group (i.e., is a group concern), it would appear as if a more group-based perspective on the controversial issue came to the fore. Although the results proved somewhat less

strong than expected, the global pattern suggests that interaction with group members of the kind that was triggered in the individual relevant discussion condition on the one hand and the initial categorisation in terms of group membership on the other had comparable effects and led to similar group-based emotions.

Instructive as these data may be, Experiment 1 had a series of shortcomings. Several of these limitations relate to our decision to avoid as much as possible participants who were directly and personally concerned by the emotion-eliciting event. This criterion is important if one ambitions to unambiguously demonstrate the emergence of group-based, as opposed to individual, emotions (Doosje, Branscombe, Spears, & Manstead, 1998; for more detailed arguments, see Kuppens & Yzerbyt, 2014; Yzerbyt, 2006; Yzerbyt et al., 2003).

A first aspect concerns the number of participants. Because we wanted to exclude participants who might feel directly threatened by the policy, we dropped all participants who had not taken Dutch classes during high school on top of those who were not Belgian citizens or not native French speakers. The consequence is that 24% of our original participants had to be discarded. In addition, the attrition led to an unequal distribution of gender across conditions and allowed a gender effect to interfere with our predicted pattern. As indicated, if gender is dropped from the analyses, the effect of the relevance of the discussion on anger is significant. In light of these considerations, and because we have no theoretical hypothesis with respect to the impact of gender on the predicted pattern, we conducted a second study in which we tried to secure a substantially larger number of participants along with a possibly more balanced distribution of male and female participants.

A second issue has to do with participants' competence in Dutch. Participants indicated being moderately uncertain regarding their knowledge of Dutch ($M$ = 2.89, $SD$ = 1.02, on a 1–5 scale). This possibly interfered with the emergence of a uniquely group-based emotion. Although including Dutch knowledge in the regression model did not alter the impact of the manipulation, individual concerns may have played a role in people's reactions. As a matter of fact, our data revealed that a lower level of knowledge in Dutch was related not only to more anger, $r = -.39$, $p = .004$, but also to more anxiety, $r = -.46$, $p = .001$ and even more sadness, $r = -.37$, $p = .007$. No relation emerged for happiness. Clearly, one would want a context where personal concerns enter the picture even less. To this end, we decided to turn to schools where the proportion of pupils who had taken Dutch in their curriculum would be markedly higher.

A final, more methodological, limitation is that Experiment 1 informs us about the impact of the discussion that took place among the group members essentially by comparing different groups. Still, it is important to have unambiguous evidence on the role of explicit social categorisation and social interaction in people's perspectives on emotional events. This can be better done by collecting longitudinal data. One obvious strategy to address this issue would be to have participants indicate their reaction to the controversial issue both *before* and *after* the discussion. To the extent that explicit social categorisation has an impact, we expect participants led to categorise themselves as group members to adopt a group-based perspective even *before* the discussion. For participants initially led to categorise themselves as individuals, a group-based perspective should only be observed *after* the discussion. This is the core hypothesis tested in Experiment 2.

## EXPERIMENT 2

Experiment 2 was modelled after Experiment 1 but this time participants reported their emotions both before and after the discussion. In order to recruit participants with better Dutch skills, we included a school located close to the school selected for Experiment 1 but where a higher proportion of students had taken Dutch classes in their curriculum. Additionally, we turned to a school that was closer to the linguistic border

where pupils would presumably be better in Dutch.

Our prediction was twofold. First, we predicted that anger, and possibly other negative emotions, would be more pronounced in the group member identity condition than in the individual identity conditions *before* the discussion. Second, once the discussion had taken place, we expected more intense negative emotions in the group member identity condition and the "individual identity, relevant discussion" condition, compared to the "individual identity, irrelevant discussion" condition.

As a means to further illuminate the phenomenology of the participants, we include a series of additional measures about participants' feelings and cognitions during the interaction. We expected stronger feelings of proximity to the interaction partner, identification with future college students and behavioural intentions to defend future college students after a relevant compared to an irrelevant discussion. Because of time constraints, questions about appraisals were dropped.

## Method

We report how we determined our sample size, all data exclusions, all manipulations and all measures in the study (See Table 3).

### *Participants*

One hundred and ten high school pupils (64 females, mean age = 17.48) took part in the experiment during class periods. Again, the number of participants was constrained by the decision of two school principals to make classes available during specific periods of time. Nine participants were excluded because they were not native French speakers or were not Belgian.

### *Procedure and design*

The procedure and scenario were similar to Experiment 1 with the exception that participants also reported their emotional reactions *before* the discussion right after reading the instructions and the fake newspaper article. All instructions asked participants to answer these questions as individuals in the two individual conditions and as future college students in the group member condition. Participants were then invited to find their discussion partner. The discussion happened as in Experiment 1, meaning that participants either discussed the newspaper article (relevant condition) or their own experience with college administration and choice of studies (irrelevant condition). After five minutes of discussion, participants were instructed to come back to their own questionnaire to answer the emotion questions and all other measures.

### *Emotional reactions*

Eight emotional items were used to tap the four basic emotions of anger (angry, revolted, $r$ = .73), anxiety (anxious, preoccupied, $r$ = .75), sadness (depressed, resigned, $r$ = .43) and happiness (joyful, satisfied, $r$ = .83). They were all answered on 7-point scales ranging from 1 (= not at all) to 7 (= completely). The same items were used for the emotions attributed to other future college students (anger: $r$ = .69; anxiety, $r$ = .72; sadness, $r$ = .61; happiness, $r$ = .76), the emotional reaction after the discussion (anger: $r$ = .73; anxiety, $r$ = .79; sadness, $r$ = .29; happiness, $r$ = .88) and the emotions attributed to future college students after the discussion students (anger: $r$ = .79; anxiety, $r$ = .82; sadness, $r$ = .67; happiness, $r$ = .85).

### *Feeling and cognitions during the interaction*

Several questions tapped participants' feelings and thoughts during the discussion. All questions started with the following probe: "During the social interaction with my partner, …". We first asked participants to report the level of proximity with their partner (i.e., "I felt close to my partner"). Four questions dealt with identification (e.g., "I felt close to the other future college students" and "I felt that I was a good representative of all future college students", $\alpha$ = .76). Finally, one question asked about participants' intentions to defend the viewpoint of future college students. In fact, all these measures were correlated and in order to simplify analyses and

**Table 3.** *Means, standard deviations and correlations for the measures in Experiment 2*

| | | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Close to interaction partner | 4.96 | 1.59 | | | | | | | | | | | |
| 2 | Identification | 4.22 | 1.25 | .41** | | | | | | | | | | |
| 3 | Intentions to defend group members | 4.22 | 1.76 | 0.19 | .64** | | | | | | | | | |
| 4 | Anger before discussion | 2.65 | 1.44 | 0.17 | .22* | .34** | | | | | | | | |
| 5 | Anxiety before discussion | 3.22 | 1.81 | .28** | .35** | .31** | .37** | | | | | | | |
| 6 | Sadness before discussion | 1.98 | 1.17 | 0.07 | 0.08 | 0.10 | .50** | .33** | | | | | | |
| 7 | Happiness before discussion | 2.20 | 1.55 | –0.05 | –0.08 | –0.09 | –.42** | –.32** | –0.04 | | | | | |
| 8 | Anger after discussion | 2.49 | 1.48 | .25* | .28** | .39** | .65** | .24* | .35** | –.31** | | | | |
| 9 | Anxiety after discussion | 2.98 | 1.74 | .32** | .27** | .28** | .30** | .78** | .29** | –.22* | .40** | | | |
| 10 | Sadness after discussion | 1.88 | 1.10 | 0.10 | .22* | .26** | .30** | 0.17 | .58** | 0.11 | .42** | .25* | | |
| 11 | Happiness after discussion | 2.40 | 1.72 | –0.18 | –0.05 | –0.09 | –.34** | –.23* | –0.12 | .74** | –.47** | –.33** | 0.09 | |
| 12 | Competence in Dutch | 3.40 | 0.91 | 0.07 | .22* | –0.03 | –.29** | –.28** | –0.13 | .24* | –0.12 | –0.19 | 0.04 | 0.11 |

*$p < .05$; **$p < .01$.

results, we analysed them as a single index of whether participants have taken on a group-based identity ($\alpha$ = .81).

### *Control variables and manipulation check*

Individual knowledge of Dutch was measured by asking whether participants took Dutch courses during high school and by inviting them to rate their competence in Dutch on a scale ranging from 1 (= very bad) to 5 (= very good). Participants also answered a manipulation check question assessing whether they discussed the newspaper article.

## Results

### *Control variables and manipulation check*

Confirming the fact that we had selected schools where the level of knowledge in Dutch was generally higher than in Experiment 1, only one participant was excluded because he never took any Dutch course and was thus personally concerned by the policy. Also, the self-reported level of knowledge in Dutch ($M$ = 3.40, $SD$ = 0.91) was higher than what had been observed in Experiment 1 ($M$ = 2.89, $t(99)$ = 5.59, $p$ = .0001). Moreover, the two schools that took part in Experiment 2 did not differ from each other in their level of knowledge in Dutch, $F(1,98) < 1$, ns. Inclusion of the school factor in subsequent analyses did not alter the finding and so this factor will not be discussed further. Finally, in contrast to Experiment 1, the relation between participants' level of knowledge in Dutch and their emotional reactions after the discussion was marginally significant for anxiety, $r$ = –.19, $p$ = .06, and not significant for the other emotions, all $r$s falling between –.12 and .11, ns.

As expected, participants in the "individual identity, irrelevant discussion" condition talked much less about the newspaper excerpt ($M$ = 3.28, $SD$ = 2.13) than those in the "individual identity, relevant discussion" condition ($M$ = 5.76, $SD$ = 1.58) or in the "group identity, relevant discussion" condition ($M$ = 6.24, $SD$ = 0.92), $b$ = 0.89, $p < .001$, the latter conditions not differing from each other, $b$ = 0.25, $p$ = .30.

*Reactions before the discussion*

We tested the impact of our experimental manipulation on the emotions that participants reported before the discussion by regressing each emotional index on a contrast-coded predictor, while controlling for gender. The *identity* contrast opposed the "group member identity, relevant discussion" condition (coded 2) to both the "individual identity, relevant discussion" and the "individual identity, irrelevant discussion" conditions (coded –1). We also included a relevance contrast as a means to check for possible differences between these conditions.

In line with predictions, participants in the group member identity condition reported more anger and anxiety than participants in the individual identity conditions, $b = 0.32$, $p = .002$, and $b = 0.37$, $p = .004$, respectively (see Table 4 for all means). Making salient participants' social identity as future college students also led to marginally more sadness, $b = 0.15$, $p = .07$. None of the emotions revealed the presence of differences for the relevance contrast. As in Experiment 1, including individual knowledge of Dutch as a covariate did not change any of the effects.

The results for *attributed emotions* were similar as for own emotions. Participants in the group member identity condition attributed more anger, $b = 0.36$, $p < .001$; more anxiety, $b = 0.30$, $p = .004$; and tangentially more sadness, $b = 0.16$, $p = .11$, to other future college students than participants in the individual identity conditions.

*Reactions after the discussion*

Before examining the impact of the discussion on the emotional reactions proper, we tested the success of our discussion manipulation. As a matter of fact, participants who discussed the controversial topic should have their social identity activated. We can investigate this by analysing the indicator of group-based identity, which comprises identification, feelings of closeness to the interaction partner and intentions to defend the viewpoint of future college students. To this end, we relied on the same contrast codes as in Experiment 1. That is, the *relevance* contrast opposed the "individual identity, irrelevant discussion" condition (coded –2) to both the "individual identity, relevant discussion" and the "group member identity, relevant discussion" conditions (coded 1). Similarly, the *identity* contrast now opposed the "individual identity, relevant discussion" condition (coded –1) to the "group member identity, relevant discussion" condition (coded 1), while the "individual identity, irrelevant discussion" condition was coded 0. Because the discussion might have created non-independence between the discussion partners, we again relied on multilevel analysis as in Experiment 1.

In line with the idea that the relevant discussion led participants to a stronger endorsement of the perspective of the group than the irrelevant discussion, the relevance contrast proved significant, $b = 0.21$, $p = .02$. Participants in the "group member identity, relevant discussion" ($M = 4.48$,

**Table 4.** *Emotion means before and after discussion as a function of experimental condition (Experiment 2;with standard deviations in parentheses)*

| | | *Individual irrelevant* | *Individual relevant* | *Group relevant* |
|---|---|---|---|---|
| Before discussion | Anger | $2.19^{a}$ (1.43) | $2.41^{a}$ (1.38) | $3.35^{b}$ (1.28) |
| | Happiness | $2.19^{a}$ (1.30) | $2.23^{a}$ (1.82) | $2.19^{a}$ (1.52) |
| | Sadness | $1.98^{ab}$ (1.30) | $1.59^{a}$ (.88) | $2.36^{b}$ (1.19) |
| | Anxiety | $2.88^{a}$ (1.74) | $2.88^{a}$ (1.91) | $3.87^{b}$ (1.65) |
| After discussion | Anger | $1.89^{a}$ (1.20) | $2.53^{ab}$ (1.55) | $3.01^{b}$ (1.49) |
| | Happiness | $2.61^{a}$ (1.51) | $2.21^{a}$ (1.74) | $2.38^{a}$ (1.90) |
| | Sadness | $1.59^{a}$ (1.15) | $1.94^{ab}$ (1.10) | $2.10^{a}$ (1.02) |
| | Anxiety | $2.38^{a}$ (1.72) | $2.97^{ab}$ (1.66) | $3.57^{b}$ (1.68) |

*Note:* Different superscripts indicate significant differences at .05 (one-tailed).

*SD* = 1.23) and the "individual identity, relevant discussion" conditions (*M* = 4.63, *SD* = 0.94) reported a more group-based identity compared to those in the irrelevant discussion condition (*M* = 3.94, *SD* = 1.20). The identity contrast was not significant, $b = -0.04$, $p = .80$, confirming the fact that the more explicit (group identity) and the more implicit (individual identity and relevant discussion) manipulation of social identity activated social identity in similar ways. These findings support our contention that discussing about the group-relevant controversial topic activated participants' social identity.

Turning to our main dependent variable, i.e., *the emotional reactions*, and in line with predictions, the relevance contrast proved significant for anger, $b = 0.28$, $p = .03$, and anxiety, $b = 0.33$, $p = .01$, confirming that participants reported more anger and anxiety after a relevant than after an irrelevant discussion (see Table 4). The identity contrast for anger, $b = 0.21$, $p = .32$, and anxiety, $b = 0.35$, $p = .11$, was not significant. No significant effect emerged on happiness or sadness (all $p$s > .26), although the pattern for happiness was similar to the one in Experiment 1. Inclusion of participants' individual knowledge of Dutch in the regression model (as a covariate) did not alter these findings.

Regarding *emotions attributed to other future college students*, the relevance contrast was marginally significant for anger, $b = 0.27$, $p = .08$, showing that participants tended to attribute more anger to other future college students after a relevant than after an irrelevant discussion. For the other emotions, the relevance contrast was not significant (all $p$s > .25). Unexpectedly, the identity contrast was significant for anxiety, $b = 0.47$, $p = .05$, showing that participants attributed more anxiety to other future college students when their group member identity had been made salient before the discussion.

In order to gain more insight into the process by which group-based emotions emerge during social interaction, namely the emergence of group-based concerns, we calculated correlations between anger and anxiety (i.e., the emotions that were affected by the relevant discussion) and the other variables that were measured after the discussion, for the relevant discussion condition only (see Table 5). Anger and anxiety correlated positively with feeling close to one's discussion partner, intentions to defend the viewpoint of future college students and identification. Thus, group-based emotions were related to how participants saw not only their relation with their discussion partner, but also their relation with the wider group whose interests were at stake.

### *Emotional change*

We predicted that the emotions before the discussion would only be based on the way participants were led to categorise themselves. In contrast, we hypothesised that the emotions after the discussion would be the consequence of whether participants did or did not discuss the controversial policy that targeted their group members. We therefore expect participants first led to categorise themselves as individuals and then asked to discuss the controversial issue with

**Table 5.** *Correlations between anger, anxiety, and other variables, relevant conditions only (n = 67; Experiment 2)*

| | | *1* | *2* | *3* | *4* | *5* | *6* |
|---|---|---|---|---|---|---|---|
| 1 | Anger before discussion | 1 | | | | | |
| 2 | Anger after discussion | .68** | 1 | | | | |
| 3 | Anxiety before discussion | .28* | .19 | 1 | | | |
| 4 | Anxiety after discussion | .18 | .32** | .79** | 1 | | |
| 5 | Closeness to discussion partner | .13 | .26* | .20 | .31** | 1 | |
| 6 | Intentions to defend the viewpoint of future college students | .16 | .28* | .30* | .31* | .17 | 1 |
| 7 | Identification with future college students | .18 | .25* | .30* | .28* | .33* | .66** |

*$p < .05$; **$p < .01$.

their partner to show a shift in relevant emotions, compared to other participants. We did not expect an emotional shift for participants that were led to categorise themselves as group members from the start, because their emotional level was already high even before the discussion. This hypothesis can be tested by testing whether the change in emotional intensity is larger in the individual relevant condition than in the other conditions. We therefore calculated an emotion change score by subtracting the emotion *before* the discussion from that *after* the discussion. The emotional change contrast was coded 2 for the "individual identity, relevant discussion" condition and –1 for the other two conditions. A second, complementary, contrast was coded 1 for the "group identity, relevant discussion" condition and –1 for the "individual identity, irrelevant discussion" condition, with the "individual identity, relevant discussion" condition coded 0.

The emotional change contrast distinguishing the "individual identity, relevant discussion" condition from the other two conditions was significant for sadness, $b = 0.22$, $p = .004$, and marginally significant for anxiety, $b = 0.17$, $p = .06$, and for anger, $b = 0.15$, $p = .10$. In other words, relative to the other conditions, participants in the individual relevant condition reported more intense negative emotions after than before the discussion. The increase itself was small (.12, .09 and .35 for anger, anxiety and sadness, respectively) but it contrasted with the overall decrease in negative emotions after the discussion in the other conditions (see Smith & Postmes, 2009, for a similar overall decline in the intensity of the reaction after a group discussion). The complementary contrast did not reach significance (all $p$s > .48).

### *Reactions during the discussion*

Because the questions pertaining to the experienced proximity with the interaction partner, their identification with the other future college students and their intentions to defend the viewpoint of future college students formed a reliable scale ($\alpha = .81$), we computed a global score indexing the degree of activation of a group identity. In line with the idea that the relevant discussion led participants to a stronger endorsement of the perspective of the group, the post-discussion relevance contrast proved significant, $b = 0.21$, $p = .02$, whereas the complementary identity contrast, $b = –0.04$, $p = .80$, did not.

## Discussion

Experiment 2 confirmed and extended the results of Experiment 1. Before the discussion, group-based anger and anxiety were stronger for those participants whose identity as future college students had been made salient compared to the other conditions. Importantly, the two individual identity conditions did not differ from each other at this moment. The discussion had a clear impact. As a matter of fact, group-based anger and anxiety were not only stronger when participants had not only discussed the relevant as opposed to the irrelevant topic but also eliminated any difference with those participants whose common identity with the victims of the policy had been emphasised from the outset of the experiment.

This second experiment thus more clearly showed that explicitly emphasising the social identity or having people discuss a group-relevant issue and share their views about the event with other group members have similar consequences as far as group-based emotions are concerned. As a set, the questions pertaining to the way our participants saw themselves in relation to their interaction partner or the other future college students and wanted to defend the group's views revealed that the discussion had made the group identity significantly more prevalent when it concerned a group-relevant as opposed to an irrelevant topic. The data confirm that those participants who took part to a relevant discussion clearly adopted the viewpoint of the group of future college students.

# GENERAL DISCUSSION

The ambition of the present research was to investigate the conditions under which emotions

with respect to some event may reflect group concerns rather than individual concerns, allowing for group-based emotions to emerge (Kuppens & Yzerbyt, 2014). In doing so, we intended to go beyond the existing literature that explicitly manipulates participants' social identity and to examine the role of social interaction among group members about a group-relevant event. Building upon earlier work conducted in our laboratory (for a review, see Yzerbyt & Kuppens, 2013), we relied on a situation in which emotions would indeed be felt on behalf of a group rather than related to personal worries. Specifically, we examined emotional reactions to a new governmental initiative that would not affect the participants themselves but concerned a group of persons whom they could easily consider as ingroup members.

First, replicating earlier findings both Experiments 1 and 2 showed that when participants' common group membership with the victims of the policy was initially made salient, this led to emotions that proved to be in line with the group's perspective. In particular, Experiment 2 showed that, compared to the remaining participants, those falling in the group member identity condition reported feeling more anger and anxiety and attributed more anger and anxiety to the other members of the group before the discussion even started. Second, in two additional experimental conditions, participants either discussed the new controversial policy (relevant discussion) or another related topic that did not affect group concerns (irrelevant discussion). Crucially, and as hypothesised, discussing the specific policy with another group member led to a similar pattern as the one observed in the salient group membership condition. In both experiments, group-based anger was stronger after the relevant than after the irrelevant discussion (although only marginally so in Experiment 1), and anger did not differ as a function of whether participants' social identity had initially been made salient or not. In other words, group-based emotions can be elicited by either making participants' social identity explicitly salient or by activating group concerns by discussing a group-based concern. The comparison with the emotions reported in the irrelevant discussion condition shows that the effects are not merely due to any interaction with other group members, but depend on the topic of the discussion. Only when the discussion is about group concerns, do we see a similar pattern of results as when one's social identity is made salient. Such an importance of the context and topic of the discussion is entirely consistent with research on the role of the social context in the emergence of stereotypes (Haslam et al., 1998; Smith & Postmes, 2011; Stott & Drury, 2004; Thompson et al., 2000).

We argued that both explicitly emphasising a social identity and implicitly activating social identity in an interaction may intensify emotional reactions because both contexts increase social identity salience. Several additional findings of the studies presented here confirm the key role of social identity salience in our explanation of the effect of social interaction. Turning to Experiment 1, participants in the relevant discussion condition, just like those in the social identity condition, reported that they found the decision more unfair than in the irrelevant discussion condition. Importantly, and in line with other findings in the literature on emotions (Frijda et al., 1989; C. A. Smith & Kirby, 2001) and intergroup emotions (Iyer & Leach, 2008; Kuppens et al., 2013; Yzerbyt & Kuppens, 2013), the effect on anger was mediated by unfairness: Participants not only felt emotions on behalf of the victims but they also shared their cognitive perspective. Because our participants were not individually affected by the new policy, this appraisal of unfairness is a group-based appraisal, that is, a consequence of viewing the world through a group lens (Kuppens & Yzerbyt, 2014).

Convergent evidence can be found in Experiment 2. First, the relevant group discussion globally led to a more group-based perspective in terms of feelings of closeness, identification and intentions to defend the viewpoint of group members, showing that the group of future college students indeed became more important to our participants. These reactions converge to suggest that the impact of communicating the relevant event with ingroup members on the emergence of group-based emotions is due to participants'

embracing a group perspective. Interestingly, in a related set of studies (Kuppens et al., 2013), we relied on a thought-listing procedure and found that the causal link involving appraisals and emotions such as the one obtained in the relevant discussion condition only emerged when participants also explicitly mentioned group membership and group concerns, again stressing the key role of social identity in the process.

As proposed here, a possible explanation for the effect of social interaction with group members is that during the interaction, individuals come to realise that they all belong to the same group with the same concerns and that they can all take a similar perspective on the issue by embracing the group's point of view. A desire to reach group consensus can thus be solved by focusing on the similarities between those who interact (Blumer, 1958; Mead, 1934). Everybody expresses an opinion but those thoughts and emotions that are expressed and endorsed most are those on which group members share a common perspective. This can only occur when their common group membership is relevant to the discussion topic. If the group identity does not provide common ground, there is no reason for it to become salient during the discussion. This is why the discussion on a topic that was not related to group concerns did not lead to group-based emotions.

To be sure, this account does not mean that other processes cannot also be at work. In fact, to the extent that the discussion pertains to an event that preoccupies the participants, several phenomena can enter the picture that could contribute to exacerbate and shape their emotional reactions. Building on various theoretical and empirical efforts that looked at the way emotions unfold in social contexts (for a review, see Parkinson, Fischer, & Manstead, 2004), one could think of such processes as contagion, polarisation or even informational and normative social influence and it stands to reason that a host of mutual feedback processes are at work between the members of the discussion group (Manstead & Fischer, 2001). In our view, these various processes are not mutually exclusive nor are they problematic from the point of view of the present social categorisation perspective. This is because they derive from having—at the same time that they contribute to making—participants realise that they share similar concerns and the same predicament. Together, they help shape a common experience and facilitate the emergence of group-based appraisals and their associated group-based emotions.

To the extent that the above reasoning holds, perhaps the most striking and somewhat ironic lesson from the present research efforts is not so much about what happens in the individual relevant discussion condition. Rather, our data go a long way to inform us about what likely takes place in people's minds when they are explicitly asked to contemplate the event from the viewpoint of their group membership, in the group member identity condition. Our findings concerning the emotions attributed to the other group members *before* the discussion suggest that people in the group member identity condition contemplate possible reactions of other group members, thereby setting the stage for some sort of "symbolic" contagion and "symbolic" polarisation, to take but these two processes. In all likelihood, this is how the social influence of other group members can operate whenever some specific social identity is made salient?

The present work examined the impact of discussing a group-relevant policy with an ingroup member and argued that this likely generates group-based emotions that are comparable to those following the more explicit activation of social identity. An intriguing question is whether a discussion with an outgroup member would also contribute to generate group-based appraisals and, in turn, facilitate the experience of group-based emotions. This is an interesting question for future research but several lines of work suggest a positive answer. As a matter of fact, the mere salience of the outgroup in the context has been found to favour an intergroup as opposed to an intragroup, i.e., individual, orientation on the part of social perceivers. For instance, research on group perception reveals that prior consideration of the outgroup exacerbates the perception of ingroup as a homogeneous whole (Castano & Yzerbyt, 1998;

Simon, 1992). In light of this, we would argue that the discussion partner need not necessarily be an ingroup member to contribute to the emergence of group-based emotions. In fact, compared to a discussion with an ingroup member, a discussion with an outgroup member about a controversial, indeed conflictual, issue would probably trigger group-based appraisals and, in turn, group-based emotions even more easily.

Of course, although we gladly stress the resemblance between allowing for social interaction to take place and providing an a-priori intergroup context, we do not want to imply that these two situations amount to strictly the same thing and that they should always lead to comparable emotional reactions. The discussion instigated in our experiments only lasted five minutes, and real-world interactions often involve much longer exchanges of verbal and non-verbal cues in the context of repeated contacts. In fact, we suspect that within-group interaction in more ecologically valid situations can often lead to more extreme reactions than in our experiments, and possibly stronger group-based reactions than in "isolated" social identity contexts examined in earlier work. This makes it all the more important to further study the life of emotions in social interaction settings.

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